CLAIMS

1. A radio digital signal receiver, comprising:

means for estimating phase noise characteristics of an outdoor unit connected to a receiving terminal of the radio digital signal receiver from a decoded error rate of a digital signal; and

means for setting carrier regenerative loop characteristics on the basis of the estimated phase noise characteristics of the outdoor unit.

2. The radio digital signal receiver according to claim 1, wherein said estimating means estimates the phase noise characteristics of the outdoor unit on the basis of the bit error rate of a predetermined polyphase PSK-modulating signal at a time when a received C/N has a predetermined value in a burst symbol reception mode for regenerating a carrier from a burst symbol signal.

3. The radio digital signal receiver according to claim 1 or claim 2, wherein said means for setting the loop characteristics sets a filter factor of a loop filter inserted into the carrier regenerative loop.

4. The radio digital signal receiver according to claim 3, wherein said burst symbol signal is a BPSK-modulating signal.

5. The radio digital signal receiver according to claim 3, wherein said predetermined polyphase PSK-modulating signal is a 8PSK-modulating signal.

6. A radio digital signal receiver comprising a carrier regenerator, a demodulator for demodulating a received modulated wave signal and a decoder for taking a digital signal from the demodulated signal, further comprising:

means for detecting a C/N of the received modulated wave on the basis of said demodulated signal;

means for detecting the decoded error rate of the digital signal;

means for determining the magnitude of the decoding error rate of said digital signal when the detected C/N takes a predetermined value; and

means for changing a loop characteristic for said carrier regenerator on the basis of the determined result of the magnitude of said decoding error rate.

7. The digital radio signal receiver according to claim 6, wherein said decoding error rate to be detected is the bit error rate of a predetermined polyphase PSK-modulating signal which is demodulated in the burst symbol reception mode for regenerating a carrier from the burst symbol signal.

8. The radio digital signal receiver according to claim 6 or claim 7, wherein means for changing said loop characteristics changes the filter factor of a loop filter inserted into the carrier regenerative loop.

9. The radio digital signal receiver according to claim 7, wherein said burst symbol signal is a BPSK-modulating signal.

10. The radio digital signal receiver according to claim 7, wherein said predetermined polyphase PSK-modulating signal is the 8PSK-modulating signal.

11. A signal processing method used in the radio digital signal receiver for demodulating a received modulated signal by using a regenerated carrier and decoding a digital signal from a demodulated signal, said method comprising the steps of:

detecting a C/N of said received modulated signal on the basis of said demodulated signal;

determining whether said detected C/N coincides with the predetermined value;

when said C/N coincides with said predetermined value,

detecting a decoded error rate of said digital signal;

comparing the magnitude of the detected decoded error rate with the predetermined threshold value; and

changing the characteristic of the carrier regenerative loop on the basis of said compared result.